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MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

A REVISION

OF THE

STATISTICS PRESENTED BY THE COMMITTEE ON TUBERCULOSIS.

BY

T. A. CHAPMAN, M.D.

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1903.

THE attention of the Council having been called to a statement that errors existed in the Statistical Tables prepared by the late Tuberculosis Committee, the Council inquired into the subject, and finding, as a matter of fact, that such errors did exist, it decided to place the Tables in question into the hands of a statistical expert for detailed examination and Report. Dr. Chapman, late Medical Superintendent of Hereford City and County Asylum, whose reputation as a statistician is well known, most kindly, at the request of the Council, undertook the work, and the Council feels that the Association is greatly indebted to Dr. Chapman for so freely placing his talents and time at its disposal.

Dr. Chapman's Report is submitted herewith.

A REVISION OF THE STATISTICS PRESENTED BY THE COMMITTEE ON TUBERCULOSIS.

By Dr. T. A. Chapman,
Late Medical Superintendent of the Hereford Asylum.

The Council of the Medico-Psychological Association, having found that certain of the statistical tables and calculations in the Report of the Committee on Tuberculosis presented in 1902 contained clerical and other errors, requested me to revise the figures, and I have undertaken the duty.

The schedules used by the Committee on Tuberculosis were placed in my hands, and I have gone through them with some care. I have not re-calculated every figure in the Tables, but have done so when any doubt arose. The revision submitted does not in any way traverse any conclusions and recommendations contained in the Report of the Committee on Tuberculosis, but, on the contrary, in several directions supports them more strongly.

The tables now submitted are—

Table A, substantially as in the Report of the Committee on Tuberculosis.

Table A_1, giving in somewhat fuller detail the summary represented by Table A* of the Committee on Tuberculosis.

Table A_2, giving the totals on which Table A_1 is calculated.

Table B, differing from that of the Committee on Tuberculosis in the asylums being classified by their tubercular death-rates for five years and not on the tubercular death-rate for 1899. They are classified into a "better" (*re* tuberculosis) and "worse" division, according to whether the rate does not or does exceed 2 per cent.

Table B_1 summarises Table B.

Table C, giving a tabulation for English county and borough

asylums of the relation of admitted to indigenous cases of tubercle.

It may be noted that in Tables A, A_1, A_2, and C, the subject-matter being patients, the unit of calculation is the individual patient; whilst in B the subject-matter is asylums, and the individual asylum is the unit of calculation. Each asylum is a separate experiment, and it is practically immaterial whether the experiment is made on 250 or 2500 patients. Chance fluctuations in the small asylums and a want of homogeneity in the larger ones may reduce the accuracy of the figures, but do not affect their relative value, which must be assumed to be equal.

The table on p. 23 (p. 415 of JOURNAL) of the Committee's Report should read as follows:

In England:

		Average.
1.	Dement and Imbecile	$8\frac{3}{4}$
2.	Mania	4
3.	Melancholia	$3\frac{1}{2}$
4.	General paralysis	$1\frac{3}{4}$
5.	Epileptic	$2\frac{1}{4}$

In Scotland:

1.	Dement and Imbecile	$3\frac{1}{2}$
2.	Mania	$2\frac{1}{4}$
3.	Melancholia	$2\frac{1}{4}$
4.	Epileptic	$\frac{3}{4}$
5.	General paralysis	0

In Ireland:

1.	Mania	7
2.	Dement and Imbecile	$4\frac{3}{4}$
3.	Melancholia	$4\frac{1}{4}$

This portion of the statistics is of little interest, as there are no correlative figures to give them any meaning.

The effect of size has also been re-calculated in Table D, using the five years' tubercular death rate instead of that for 1899. The results are substantially the same as those already given in Chart II.

One or two points as to which these figures emphasise or

vary the conclusions gathered from them by the Committee on Tuberculosis may be referred to.

Table B_1 shows as to sites that the "better" asylums have a "good" soil in fully two cases out of three, whilst the "worse" have a "bad" soil in three cases out of four. This result varies in each subdivision, but is only contradicted in the case of the "better" Scotch asylums, where only three out of seven have a "good" soil.

The broad result here is so pronounced that the value of a "good" soil can hardly be doubted.

The hours spent in the open air are greater in the "better" asylums throughout each of the five groups, the total figures for seventy asylums giving 6·6 hours for the "better" and 5·8 for the "worse"—a difference of 14 per cent. in favour of the better asylums.

As to day space, the "good" asylums have fractionally greater space, viz. by thirteen feet. It is not so in every group, and the total difference of thirteen feet is too small to found any strong conclusions upon.

As to night space, the "good" asylums are better by forty-seven feet, nearly 8 per cent.—quite an appreciable and significant quantity; only in the borough asylums (seven in number) are there contrary figures.

Abundant space would appear to be more important at night than by day, probably because more continuously occupied.

Ventilation: in the "good" asylums artificial and natural ventilation are about equal, in the "worse" as three to seven—ratios distinctly in favour of artificial ventilation.

Scotland votes to the contrary by six to one. Were Scotland omitted, then the "better" asylums vote fifteen to twelve in favour of artificial ventilation; the "worse" are in favour of natural by more than two to one (twenty-one to nine). This is very strong evidence that natural ventilation is insufficient. It may be noted that the Scotch asylums all have large night space, averaging 814 feet against an average of 680.

Tables C and C_1 tabulate figures given in the collected schedules, which, though collected with an obvious prevision of their value, were not reported by the Committee on Tuberculosis. They refer to the extent to which tubercle was detected on admission amongst the patients who died from tubercular disease in 1899.

These figures may be studied from various points of view. Though in some few schedules the facts are not given, and in a few others appear to have been given without much investigation, they are on the whole apparently trustworthy.

They refer entirely to the deaths in 1899, and say nothing of patients suffering on admission from tubercle who recovered, nor of those who acquired tubercular disease in the asylums but did not die.

The figures show that for every 100 cases admitted (and finally terminating fatally), 375 originated in the asylums.

It appears also that in the asylums with a higher tubercular death-rate a larger number were admitted with tubercle than in the "better" asylums. There is nothing to show how far this is due to the number of tubercular admissions being larger, or how far simply to fewer recoveries amongst them: we know that in some asylums tubercular cases do recover in considerable numbers.

The further remarkable fact comes out that in the "worse" asylums, though the admitted cases are more numerous, the indigenous are still more so.

In English county and borough asylums, in 30 "better" asylums (omitting fractions and using round numbers), where 5 cases are admitted 17 cases occur in the asylum; whilst in 24 "worse" asylums 9 cases instead of 5 are admitted; but the indigenous cases are not 17 as in the "better" asylums, nor 31, which would be proportionate to the 9 admissions, but 38. If the 9 "worst" be taken, then the admissions are 10; but the indigenous cases are not 17, nor 38, nor 42, as they would be if proportionate to the ratio in the "worse" asylums, but no less than 56.

In the remaining asylums—English, Scotch, and Irish (only twenty-four in number)—the admissions are much the same in each group, the excess in the "worse" asylums being entirely due to indigenous cases.

Whatever detailed interpretation we may make of these figures, their broad meaning is clear, and that is that the more tubercle there is the more there will be.

Their practical teaching, therefore, is most unmistakably that the segregation of infected individuals is an imperative necessity.

As to other practical points, the well-known value of an

open well-drained soil is so fully illustrated that it must be more attended to in the future selection of sites for asylums; and though asylums now existing cannot be moved, it deserves the fullest inquiry in every case whether more might not be done by deep subsoil draining to improve the condition of asylums on heavy soils.

The association of natural ventilation with open fires is more frequent in the "worse" asylums. This may mean to some extent that these are older asylums, and may on that account be more liable to tubercular infection. But we must associate the fact that natural ventilation is much more usual in the worse asylums, with the significant exception of the Scotch asylums, which have natural ventilation but a very large night cubic space.

The practical deduction is that natural ventilation appears to be inefficient unless assisted by large cubic space, with especial reference to night conditions, when it probably often happens that warmth is maintained and draughts avoided by checking ventilation to a dangerous extent.

Although it may be unnecessary to give a detailed tabulation, it seems desirable to present some comparison of the ordinary rate of mortality with the tubercular death-rate. For this purpose the first fourteen (omitting two of under five years' existence) county asylums in Table B, having a tubercular rate not exceeding 1·5 per cent., are compared with the last fifteen in the same table, with a tubercular rate of 2·5 or over.

The figures are—

	Average number resident.	Average deaths.	Average tubercular deaths.	Total deaths per cent.	Tubercular deaths per cent.
First 14	13,924	1216·4	185·6	8·7	1·3
Last 15	15,385	1773·8	530·8	11·7	3·5

If the tubercular deaths be subtracted, then the two groups contrast with an ordinary death-rate not of 8·7 and 11·7, but of 7·4 and 8·2—a difference of only 0·8 per cent. This 0·8 per cent., however, must be still further reduced, since an examination of the schedules shows that in a good many cases the tubercular deaths (not so certified) are but imperfectly returned, especially in the earlier years. The correction for this would probably be greater in the last than in the first group by something like the proportion of 3·5 to 1·3. It is also tolerably certain that when tubercle is in excess, either actual tubercle or the

causes favouring it would increase the death-rate without actually existing active tubercle at the date of death.

With a very moderate allowance for these two circumstances the 0·8 would be much diminished, and it would appear that the difference of 3 per cent. in the death-rates of the two groups (one third more than that of the "better" group) is entirely, or almost entirely, due to the presence of tubercle and its causes.

The figures of the two Staffordshire asylums are sufficiently exceptional to suggest they should be eliminated. The result, however, is the same; without them the mortality of the second group becomes 10·9, with a correction for tubercle of 2·8, making the two groups 7·4 and 8·1 respectively, or a difference of 0·7 instead of 0·8 as before. The Staffordshire asylums alone give a similar result, the general mortality without tubercle being high, but not remarkable, viz. something like 10·5.

The inference from these facts seems to be that apart from tubercle the general health of the patients in both groups is not far from identical, and that the tubercle can hardly be due to any essential difference in the patients in the two groups of asylums, and cannot have any special connection with insanity,(1) but is causally associated with the individual asylums.

Though the statistics give some very definite indications, they fail to completely solve most of the questions they raise. For example, under present conditions it would appear that six and a half hours in the open air is more efficient in avoiding tubercle than merely six hours. There can, however, be little doubt that if infective cases were isolated, and ventilation and cubic space satisfactory, as much as even six hours would be by no means essential to a low tubercular rate. Probably if night space were 2500 feet, grave defects of ventilation, etc., would be comparatively innocuous, and so on. The practical question is, What is a necessary minimum in each of these items, so that the combined effect shall be elimination of tubercular disease at a minimum cost?

There is nothing to show that if isolation were efficiently enforced the mass of the "better" asylums, at least, are not adequately equipped in most of the other respects already.

(1) Phthisical insanity is, of course, but a small component in these figures.

A fuller statistical inquiry than the present would probably confirm and define more clearly any conclusions that the present one points to, but would probably not alter them to any material extent. Further light might be got—and this course seems decidedly suggested by the relations shown between imported and indigenous cases—by a careful examination and comparative study of the conditions prevailing in a selected few of the "better" and "worse" asylums.

No analysis has been made of the dietaries. A careful comparison of the dietetic conditions in, say, five (or ten) of the "better" and as many of the "worse" asylums, both from a *table d'hôte* and from a laboratory standpoint, would have some value.

The following appear to be the most important deductions from the statistics:

1. That infection is one of the strongest causative elements in the prevalence of tuberculosis in asylums.
2. That a healthy (dry and well-drained) site is of extreme importance. The value of a good site is well known, but asylum authorities do not appear to be aware that it is so great as these statistics show.
3. The causes of tuberculosis in asylums inhere in the asylums themselves, and not in the character of the patients sent to them. This must be very generally true, since the exceptions, and possibly very marked exceptions, that individual asylums no doubt present, make so little mark on the statistics.
4. That time spent out of doors, cubic space indoors, ventilation, etc., all appear on the side of the account one would expect, but by margins usually too small to be very significant. It would seem that probably all these are inadequate, even in the "better" asylums, for the proper treatment of tuberculosis, but that, on the other hand, they are possibly sufficient even in the "worse" asylums if tubercular taint were absent. The only detail hinted with any definiteness is that, with our present habits and prejudices, due ventilation can hardly be obtained without artificial means and artificial heating in dormitories giving less than 800 feet per head.

T. A. CHAPMAN.

TABLE A.—Showing Statistics respecting Tuberculosis, as compiled from Schedules.

GROUP I.—ENGLAND AND WALES.

COUNTY ASYLUMS.	1 Average Daily Residents, 5 years, 1895 to 1899.			2 Ratio per cent. to Average Daily Residents of Deaths from ALL CAUSES, 5 years.			3 Ratio per cent. to Average Daily Residents of Deaths from ACTIVE TUBERCLE, 5 years.			4 Ratio per cent. to Average Daily Residents of Deaths from ALL CAUSES, 1899.			4A Comparing 1899 with Av. of 5 yrs.	5 Ratio per cent. to Average Daily Residents of Deaths with ACTIVE TUBERCLE, 1899.			5A Comparing 1899 with Av. of 5 yrs.	6 Average length of Residence in Asylums of these Cases (Column 5).				7 Form of Infantile at Death of these Cases, dying in 1899 (Column 5).								
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.		M. Yrs.	M. Mos.	F. Yrs.	F. Mos.		G. P.	Mas.	Mel.	Fp.	Dem.	Imb.	Other forms.
BEDS, HERTS, AND HUNTS.																														
1. Arlesey	483	582	1065	11·3	10·	10·5	1·9	2·2	2·	12·3	12·2	12·2	+1·7	1·5	2·8	2·1	+ ·1	0	0	0	0	M.	...	...	2	1	3	1	
																						F.	4	5	1	3	1	2	
BERKS.																														
2. Moulsford	267	329	596	9·9	7·8	8·8	1·9	1·8	1·8	11·4	10·	10·7	+1·9	1·1	1·7	1·4	− ·4	5	7	6	8								
BUCKS.																														
3. Aylesbury	216	275	491	10·7	8·2	9·5	1·4	1·1	1·2	12·9	9·	10·7	+1·2	1·8	·7	1·2	Average + ·3	4	3	9	4	M.	1	...	...	2	...	1	
																						F.	...	...	1	...	1		
CAMBS.																						M.	...	...	1	1	2		
4. Fulbourne	243	286	529	9·	8·	8·4	1·5	1·6	1·5	10·4	7·	8·5	+0·1	1·6	2·	1·8		8	0	4	3	F.	...	2	3	...	...	1	
CHESTER.																						M.	2	4	1	...	7	1	2
5. Upton	334	384	718	12·8	9·9	11·4	3·6	2·3	3·	12·1	12·5	12·3	+ ·9	4·2	3·2	3·6	+ ·6	8	3	5	7	F.	...	7	...	2	4	...	1
CORNWALL.																						M.	4	1	...	...	6	1	
6. Bodmin	345	425	770	8·1	7·	7·7	2·3	2·3	2·3	8·7	8·7	8·7	+1·	3·4	3·3	3·3	+1·	13	1	12	8	F.	...	1	4	3	6		
CUMBERLAND AND WESTMORELAND.																														
7. Carlisle	325	294	619	8·	8·2	8·1	1·8	3·5	2·4	7·2	6·5	6·9	−1·2	3·	3·6	3·3	+ ·9	8	8	3	5	M.	...	4	1	1	2	2	
																						F.	...	5	3	1	1	1	
DENBIGH, ETC.																						M.	...	5	2	...	...	2	
8. Denbigh	326	338	664	10·8	8·6	9·7	3·	3·6	3·3	9·	9·	9·	− ·7	2·5	3·3	2·9	− ·4	7	8	5	7	F.	...	4	5	...	2	1	
DERBY.																						M.	...	3	2	...	4	4	
9. Derby	284	287	571	13·8	10·6	12·2	2·8	3·5	3·2	17·3	10·2	13·8	+1·6	4·4	4·8	4·6	+1·4	3	7	3	8	F.	...	3	5	...	2	3	
DEVON.																						M.	...	...	2	...	...	3	
10. Exminster	448	645	1093	8·7	6·	7·2	2·1	1·9	2·	6·9	5·2	6·3	− ·9	1·	1·5	1·3	− ·7	24	0	12	0	F.	...	6	2	2			
GLAMORGAN.																						M.	...	3	...	...	4		
11. Angelton	350	256	606	14·	5·9	10·5	1·1	·8	1·	14·	3·7	9·7	− ·8	2·	·4	1·3	+ ·3	6	9	0	2	F.	...	1	...	...			
																						M.	1	6			10	3	
12. Parc Gwylt	390	421	811	8·2	8·3	8·3	2·5	2·3	2·4	10·	8·9	9·4	+1·2	2·8	1·3	2·	− ·4	3	11	5	4	F.	...	3	1	...	4	1	
11 and 12 combined ...	740	677	1417	10·8	7·6	9·2	1·9	1·6	1·8	11·7	7·2	9·5	+ ·3	2·5	1·	1·7	− ·1	0	0	0	0								
GLOUCESTER.																														
13. Gloucester	495	564	1059	12·3	9·2	10·7	2·*	1·2	1·6	12·9	8·9	10·8	+ ·1	2·2	1·8	2·	+ ·4	7	2	9	6	M.	...	1	2	...	3	5	
																						F.	...	3	4	...	2	1	
HANTS.																						M.	1	2	1	...	4	1	
14. Fareham	476	554	1030	11·2	8·	9·4	1·7	1·9	1·8	12·2	8·4	10·2	+ ·8	1·8	1·3	1·5	− ·3	8	0	4	3	F.	...	2	3	1	1		
HEREFORD.																						M.	...	...	1				
15. Hereford	181	201	382	7·5	5·5	6·5	1·8	1·3	1·5	12·3	6·6	9·3	+2·8	·6	3·5	2·2	+ ·7	11	0	6	0	F.	...	2	1	3	...	1	
KENT.																						M.	2	8	2	1	14	1	
16. Barming Heath ...	665	938	1603	14·8	9·	11·4	4·8	2·8	3·6	16·	12·1	13·1	+1·7	4·4	3·5	3·8	+ ·2	7	3	8	9	F.	...	4	3	...	20	4	
																						M.	2	3	...	...	9	1	
17. Chartham	442	534	976	10·5	7·7	8·8	2·7	1·6	2·1	7·8	9·2	8·6	− ·2	3·	1·9	2·4	+ ·3	4	6	7	6	F.	...	3	2	...	7		
LANCASHIRE.																						M.	...	2	...	2	2		
18. Lancaster	651	1324	1975	9·9	7·	7·9	2·3	1·6	1·8	6·8	7·7	7·4	− ·5	1·	2·2	1·8		5	11	4	0	F.	1	3	9	7	9	3	
19. Rainhill	943	964	1907	13·5	7·5	10·4	5·9	4·2	5·	14·4	7·1	10·7	+ ·3	6·	3·5	4·7	− ·3	3	6	5	4								
20. Whittingham	991	947	1938	11·4	10·1	10·7	1·8	3·4	2·6	8·7	11·8	10·2	− ·5	2·	5·4	3·7	+1·1	7	5	8	8								
LEICESTER AND RUTLAND.																														
21. Leicester	224	264	488	12·7	8·4	10·2	3·6	3·	3·3	13·8	11·5	12·6	+2·4	3·4	3·5	3·5	+ ·2	11	6	6	8	M.	1	1	1	2	2	1	
																						F.	1	2	...	1	4	1	
LINCOLN.																						M.	...	4	2	2	1	1	
22. Bracebridge	349	372	721	15·1	11·6	13·3	1·9	2·2	1·8	17·6	14·1	15·7	+2·4	3·	3·1	3·	+1·2	5	9	15	6	F.	...	6	1	2	3		
LONDON.																						M.	1	1	4	1	11	1	3
23. Banstead	932	1548	2480	13·	5·4	7·8	2·8	1·2	2·	12·1	4·9	8·	− ·2	2·1	·5	1·3	− ·7	4	0	7	5	F.	...	...	1	1	1	1	3
																						M.	3	6	3	2	4		
24. Cane Hill	923	1233	2156	9·6	6·4	7·9	1·6	1·4	1·5	9·1	7·1	8·	+ ·1	2·	1·5	1·7	+ ·2	3	7	5	0	F.	...	5	5	4	5		
																						M.	2	3	2	2	6	1	
25. Colney Hatch	912	1549	2461	11·6	7·4	8·9	1·6	1·2	1·4	11·9	8·1	9·4	+ ·5	1·7	·9	1·3	− ·3	4	8	3	6	F.	...	5	6	...	3		
																						M.	8	6	6	1	11	1	
26. Claybury	1027	1432	2459	14·5	9·5	11·6	3·†‡	2·3	2·6	12·6	9·3	10·7	− ·9	3·2	2·	2·5	− ·1	2	8	3	3	F.	6	6	8	1	6	1	
																						M.	2	2	6	2	4		
27. Hanwell	848	1339	2187	11·2	7·	8·7	1·5	1·1	1·3	11·4	7·9	9·1	+ ·4	1·7	1·5	1·6	+ ·3	4	3	6	1	F.	5	5	8	...	6		
MIDDLESEX.																						M.	2	2	...	3	4	1	
28. Wandsworth	556	732	1288	11·3	8·	9·	1·3‡	1·7	1·5	11·1	8·2	9·5	+ ·5	2·	2·	2·	+ ·5	4	8	6	1	F.	...	8	1	2	3	2	
NORFOLK.																						M.	...	1	...	...	1		
29. Thorpe	338	477	815	12·6	8·9	10·5	1·8	1·2	1·5	8·4	9·5	9·1	−1·4	·6	1·	·8	− ·7	18	0	4	0	F.	...	3	1	...	1		
NORTHUMBERLAND.																						M.	2	...	3	...	6	1	1
30. Morpeth	343	277	620	11·	12·	11·4	3·8	6·	4·8	14·2	16·1	15·	+3·6	4·6	4·	4·	− ·8	7	11	5	1	F.	...	...	2	1	1	1	5
NOTTS.																						M.	...	2	1	2	2		
31. Nottingham	180	175	355	12·8	8·5	10·7	2·8	2·3	2·5	11·7	11·5	11·6	+ ·9	3·5	4·5	4·	+1·5	6	5	3	3	F.	1	1	1	1	3	1	
OXFORD.																						M.	...	...	1	...	1		
32. Littlemore	222	315	537	14·5	9·6	11·	1·1*	·9	1·	11·3	10·6	10·9	− ·1	·8	·3	·5	− ·5	2	0	6	0	F.	...	...	...	1			
SALOP AND MONTGOMERY.																						M.	1	1	1	1	...	2	1
33. Shrewsbury	371	451	822	11·6	9·6	10·5	1·6	2·4	2·1	13·2	10·9	11·9	+1·4	2·	4·5	3·4	+1·3	2	6	6	0	F.	...	2	3	4	5	4	3
SOMERSET.																						M.	...	...	1	...	1	2	
34. Wells	376	515	891	11·	8·	9·5	1·3	1·6	1·4	12·	9·	10·3	+ ·8	1·2	1·	1·1	− ·3	9	6	1	3	F.	...	2	...	...	2	1	
																						M.	2	...	...	...	1		
35. Cotford	164‖	182	346	7·4	5·3	6·3	1·	1·4	1·2	9·5	7·6	8·4	+2·1	1·5	2·	1·7	+ ·5	1	5	1	2	F.	1	...	2	...	...	2	
STAFFORD.																						M.	1	3	2	4	4	1	
36. Burntwood	359	387	746	15·5	16·	15·7	4·7	5·6	5·2	13·	14·4	13·7	−2	3·6	6·6	5·1	− ·1	4	4	5	5	F.	1	7	3	8	6	4	
37. Stafford	511	417	928	18·	15·	16·5	5·5	6·4	5·9	23·3	16·4	20·1	+3·6	9·8	7·3	8·6	+2·7	6	1	4	9								
SUFFOLK.																						M.	...	1	...	3			
38. Woodbridge	277	332	609	11·4	9·7	10·5	2·5	3·	2·7	13·5	10·	11·6	+1·1	1·5	1·8	1·7	−1·	4	0	7	0	F.	...	...	2	...	3	1	
SURREY.																														
39. Brookwood	423	621	1044	14·	7·6	10·2	2·6	2·4	2·5	12·6	7·	9·8	− ·4	2·8	2·	2·6	+ ·1	2	0	5	0								
SUSSEX (WEST).																						M.	...	...	1	1			
40. Chichester	157†	190	347	7·9	5·	6·5	1·8*	1·6	1·2	8·3	5·4	6·7	+ ·2	·9	·8	·8	− ·4	1	6	2	0	F.	...	...	...	1	1		
WARWICK.																						M.	...	1	2	2	2	4	1
41. Hatton	371	532	903	13·2	9·6	11·9	2·4	1·7	1·9	12·5	8·5	10·	−1·9	3·	2·	2·4	+ ·5	8	1	4	6	F.	...	3	1	1	2	1	3
WIGHT, ISLE OF.																						M.	...	1	...	1	1		
42. Newport	88‖	128	216	12·8	4·8	8·7	1·7	1·1	1·4	12·7	3·4	6·9	−1·8	2·7	·6	1·4		0	11	2	6	F.	...	1					
WILTSHIRE.																						M.	...	1					
43. Devizes	366	440	806	9·2	7·	8·	1·3	1·1	1·2	9·	8·8	8·9	+ ·9	·3	1·	·7	− ·5	0	4	4	7	F.	...	1	2	...	2		
WORCESTERSHIRE.																						M.	4	2	1	2	3	3	
44. Powick	471	603	1074	9·6	7·3	8·4	2·1	2·2	2·1	9·2	7·1	8·	− ·4	3·	2·2	2·6	+ ·5	7	0	4	2	F.	...	1	6	...	6	1	
YORKSHIRE.																						M.	...	1	1	2	3	1	1
45. Clifton	353	382	735	11·6	8·4	10·	3·	2·3	2·6	15·7	9·1	11·4	+1·4	2·6	2·8	2·7	+ ·1	4	2	10	6	F.	...	4	2	1	2	...	1
																						M.	1	...	6	2	8	...	4
46. Wakefield	707	695	1402	13·1	8·5	10·8	2·8	1·8	2·3	11·2	6·	9·1	−1·7	3·	·7	1·9	− ·4	4	11	7	6	F.	...	1	1	...	2	...	1
																						M.	2	3	2	6	1	6	
47. Wadsley	736	882	1618	13·2	9·7	11·3	3·	1·7	2·3	14·5	9·1	11·6	+ ·3	2·6	1·8	2·2	− ·1	6	0	6	3	F.	1	5	2	2	6		
																						M.	1	2	2	...	3	2	
48. Menston	662	791	1453	15·	11·1	12·8	1·5¶	2·	1·7	13·4	10·7	11·9	− ·9	1·3	2·5	1·9	+ ·2	3	9	4	3	F.	2	2	2	2	9	4	
49. Beverley	181	247	428	9·	6·4	7·5	1·4	1·6	1·5	5·8	5·9	5·8	−1·7	1·5	·4	0·9	− ·6	8	0	7	0								
Average for 43 asylums																						M.	1·1	2·1	1·5	1·2	3·6	1·3	·3
																						F.	·3	3·	1·6	1·2	3·4	1·	1·
Total																							1·6	5·1	3·1	1·4	7·	2·3	1·3

* No P.M.'s recorded. † P.M.'s for 1898 and 1899 only. ‡ Average for 1898 and 1899 only. § Average for three years (1897—1899).
‖ Average for four years (1896—1899). ¶ No P.M.'s recorded for 1895 and 1896.

TABLE A.

Group 2.—ENGLAND AND WALES.

Borough and City Asylums, Hospitals, Metropolitan District Naval, Criminal, and Idiot Asylums.

Borough and City Asylums.	1 Average Daily Residence, 5 years, 1895 to 1899.			2 Ratio per cent. to Average Daily Residents of Deaths from all causes. 5 years.			3 Ratio per cent. to Average Daily Residents of Deaths from Active Tubercle. 5 years.			4 Ratio per cent. to Average Daily Residents of Deaths from all causes. 1899.			4A Comparison of 1899 with Av. of 5 yrs.	5 Ratio per cent. to Average Daily Residents of Deaths from Active Tubercle. 1899.			5A Comparison of 1899 with Av. of 5 yrs.	6 Average length of Residence in Asylums of these Cases (Column 5).				7 Form of Insanity at Death of these Cases dying in 1899 (Column 5).								
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.		M. Yrs.	M. Mos.	F. Yrs.	F. Mos.		G. P.	Man.	Mel.	Ep.	Dem.	Imb.	Other forms.
Bristol.																						M.	6	1	...	2	2	1	
1. Fishponds	357	373	730	12·8	10·	11·4	2·	1·8	1·9	19·7	13·5	16·4	+5·	3·5	1·5	2·3	+ ·4	6	9	7	2	F.	1	...	1	1	2	1	
Derby.																						M.	2						
2. Rowditch	152	165	317	12·	10·	11·	1·9	2·9	2·4	12·7	11·2	11·9	+ ·9	1·3	2·3	1·8	− ·6	0	7	6	0	F.	1	3					
Leicester.																													
3. Humberstone	249	291	540	7·2	6·2	6·6	1·	·9	1·	7·4	3·7	5·4	−1·2	·8	·7	·7	− ·3	3	6	5	0								
London (City).																						M.	1	1					
4. Stone	235	244	479	8·8	5·2	7·	·6	·4	·5	9·6	5·4	7·4	+ ·4	·8	...	·4	− ·1	6	3	...	...	F.							
Yorks.																						M.	...	...	...	1	1	...	1
5. Middlesbrough * ...	92	84	176	15·5	9·4	12·4	1·7	3·1	2·4	17·	10·	13·6	+1·2	2·5	4·	3·2	+ ·8	1	1	0	8	F.	...	...	1	2	1		
Newcastle (City).																						M.	6	1	3	1	3		
6. Gosforth	227	264	491	14·4	8·	10·8	4·7	1·5	3·	13·5	4·	8·3	−2·5	6·	·8	3·2	+ ·2	2	3	4	10	F.	...	...	1	...	...	1	
Nottingham (City).																						M.	3	2	1				
7. Mapperley	292	324	616	11·4	7·	8·8	1·3	1·2	1·2	12·2	6·	9·	+ ·2	2·	1·4	1·7	+ ·5	2	3	6	1	F.	1	1	...	...	3		
Plymouth.																						M.							
8. Ivybridge	111	141	252	8·6	8·	8·1	1·9	2·1	2·	10·	11·	10·7	+2·6	...	2·6	1·5	− ·5	...	...	6	1	F.	...	1	2	...	1	1	
Norwich.																													
9. Hillesdon	139	160	299	14·3	11·9	13·1	1·6	1·2	1·4†	15·	10·	12·3	− ·8	2·8	·6	1·7	+ ·3	6	3										
Sunderland.																						M.	1	1	3	...	1	1	
10. Ryhope	156	147	303	11·9	12·	11·9	3·4	1·9	2·7	16·	10·9	13·5	+1·6	4·1	1·8	3·	+ ·3	3	0	2	0	F.	...	...	2	...	1		
Hospitals.																													
Gloucester.																						M.							
11. Barnwood House ...	65	191	256	6·6	1·2	2·5	·7	·2	·5	6·	6·	6·	+3·5	...	1·	·6	+ ·1	...	...	26	0	F.	...	...	...	...	1		
Oxford.																													
12. Warneford	41	49	90	7·5	2·7	4·4	·2	...	·1	10·	2·	5·5	+1·1	...	...	...	− ·1												
Met. District.																													
Dartford.																						M.	...	1	...	...	...	7	
13. Darenth	1074	936	2010	3·6	4·4	4·	·8†	·9	·8	3·3	3·8	3·5	− ·5	·7	·8	·7	− ·1	10	11	8	1	F.	...	...	...	...	2	5	
Watford.																						M.	...	2	...	6	16	18	
14. Leavesden	890	1094	1984	11·8	9·5	10·6	3·8‡	2·3	3·	13·6	12·	12·8	+2·2	4·8	2·8	3·8	+ ·8	8	0	9	0	F.	1	...	...	4	17	8	
Naval, Crim. and Idiot.																													
Yarmouth.																						M.	4	...	...	...	1		
15. Royal Naval	189	...	189	8·4	...	8·4	1·1	...	1·1	9·	...	9·	+ ·6	2·6	...	2·6	+1·5	8	0	...	...	F.							
Berks.																													
16. Broadmoor	479	165	644	3·1	1·6	2·7	·6	...	·3	2·3	1·2	2·	− ·7	...	...	...	− ·3												
Redhill.																													
17. Earlswood	378	186	564	2·9	3·7	3·2	2·	3·5	2·4	2·7	3·9	3·1	− ·1	1·8	2·8	2·3	− ·1												
																	Average for 12 Asylums =					M.	1·9	·7	·5	·9	2·	2·2	
																						F.	·3	·4	·6	·5	2·3	1·5	
																	Total ...					=	2·2	1·1	1·1	1·4	4·3	3·7	

* Two years only (1898 and 1899). † No P.M.'s recorded. ‡ P.M.'s for 1897 only.

TABLE A.

GROUP 3.—SCOTLAND.

ROYAL AND DISTRICT ASYLUMS.

ROYAL AND DISTRICT ASYLUMS.	1			2			3			4			4A	5			5A	6				7							
	Average Daily Residents, 5 years, 1895 to 1899.			Ratio per cent. to Average Daily Residents of DEATHS from ALL CAUSES. 5 years.			Ratio per cent. to Average Daily Residents of DEATHS from ACTIVE TUBERCLE. 5 years.			Ratio per cent. to Average Daily Residents of DEATHS from ALL CAUSES. 1899.			Comparison of 1899 with Av. of 5 yrs.	Ratio per cent. to Average Daily Residents of DEATHS with ACTIVE TUBERCLE. 1899.			Comparison of 1899 with Av. of 5 yrs.	Average length of RESIDENCE in Asylums of these Cases (Column 5).				FORM OF INSANITY at DEATH of these Cases dying in 1899 (Column 5).							
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.		M.		F.			G. P.	Man.	Mel.	Ep.	Dem.	Imb.	Other forms.
																		Yrs.	Mos.	Yrs.	Mos.								
ROYAL.																													
1. Aberdeen	334	427	761	9·9	6·6	7·9	1·4*	1·	1·2	11·3	7·9	9·4	+ 1·5	2·4	1·5	1·9	+ ·7	5	11	5	3	M.	...	1	2	1	3	2	
																						F.	...	...	1	2	4		
2. Edinburgh	445	452	897	12·6	10·7	11·6	1·8†	2·	1·9	11·9	11·2	11·5	− ·1	1·8	1·3	1·6	− ·3	2	11	1	6	M.	...	3	3	1	...	...	1
																						F.	...	1	4	...	...	1	
3. Montrose	274	340	614	9·6	7·	8·1	3·	1·2	2·	9·8	7·	8·	− ·1	3·1	1·3	2·2	+ ·1	13	0	8	9	M.	...	3	3	...	...	3	
																						F.	...	3	...	...	1		
4. Perth.—Murray's ...	65	55	120	8·	4·4	5·5	·6	4·	·5	10·	5·5	7·7	+ 2·2	2·9	1·9	2·4	+ 1·9	1	0	0	1	M.	...	...	...	...	1	...	1
																						F.	...	1					
DISTRICT.																													
5. Govan	133	119	252	9·	5·	7·4	1·5*	1·2	1·3	12·6	9·	11·	+ 3·6	1·7	2·6	2·1	+ ·8	1	7	1	6	M.	...	1	...	1	2		
																						F.	...	3	...	...	2	...	1
6. Inverness	266	249	515	6·8	8·4	7·6	2·7	2·8	2·7	6·2	9·3	7·7	+ ·1	2·4	1·8	2·1	− ·6	6	6	2	6	M.	...	...	3	1	2	1	
																						F.	...	...	1	...	3	...	1
7. Lanark	265	213	478	9·8	7·9	8·7	1·2	·6	·9	14·5	7·2	10·9	+ 2·2	1·1	·7	·9	Avge.	2	3	0	3	M.	...	1	...	2	1		
																						F.	...	...	...	...	1		
8. Midlothian	115	14	229	8·3	10·	9·2	·4	1·2	·8	6·6	16·4	11·3	+ 2·1	·9	1·9	1·3	+ ·5	0	4	6	4	M.	...	...	1				
																						F.	...	...	1	...	...	1	
9. Perth	175	168	343	7·4	6·6	7·	1·9	·9	1·4	11·3	8·3	9·9	+ 2·9	3·2	·6	1·8	+ ·4	1	8	2	0	M.	...	...	...	1	2	2	1
																						F.	...	...	...	...	1		
10. Roxburgh	126	149	275	8·	6·4	7·	1·8	1·6	1·7	10·	7·	8·3	+ 1·3	3·6	1·9	2·6	+ 0·9	8	11	1	10	M.	...	3	1	...	1		
																						F.	...	1	2				
Average for 10 Asylums =																						M.	...	1·2	1·3	·7	1·2	·8	·3
																						F.	0	0·9	·9	·2	1·2	·2	·2
Total.....																						=	0	2·1	2·2	·9	2·4	1·0	·5

* P.M.'s for 1899 only.

† No P.M.'s recorded.

TABLE A.

GROUP 4.—IRELAND.

DISTRICT AND CRIMINAL ASYLUMS.

DISTRICT AND CRIMINAL ASYLUMS.	1 Average Daily Residents, 5 years, 1895 to 1899.			2 Ratio per cent. to Average Daily Residents of DEATHS from ALL CAUSES. 5 years.			3 Ratio per cent. to Average Daily Residents of DEATHS from ACTIVE TUBERCLE. 5 years.			4 Ratio per cent. to Average Daily Residents of DEATHS from ALL CAUSES. 1899.			4A Comparison of 1899 with Av. of 5 yrs.	5 Ratio per cent. to Average Daily Residents of DEATHS from ACTIVE TUBERCLE. 1899.			5A Comparison of 1899 with Av. of 5 yrs.	6 Average length of RESIDENCE in Asylums of these Cases (Column 5).				7 FORM OF INSANITY at DEATH of these Cases dying in 1899 (Column 5).								
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.		M.		F.			G. P.	Man.	Mel.	Ep.	Dem.	Imb.	Other forms.
																		Yrs.	Mos.	Yrs.	Mos.									
DISTRICT.																														
1. Belfast	497	384	881	6·8	6·5	6·7	·7 †	1·2	·9	7·8 †	9·3	8·6	+ 1·9	1·6	1·8	1·6	+ ·7	4	7	1	0	M.	...	4	2	...	1	1		
																						F.	...	2	2	...	2	1	1	
2. Cork	711	666	1377	7·	8·3	7·7	2·1 *	4·	3·	8·8 *	9·7	9·2	+ 1·6	2·7	4·2	3·4	+ ·4	3	0	2	6	M.	...	10	5	1	4	1		
																						F.	...	15	8	...	7			
3. Limerick	302	299	601	7·6	7·7	7·6	1·7 ‡	3·5	2·5	10·3 ‡	11·6	10·8	+ 3·2	2·5	6·9	4·6	+ 2·1	7	0	5	0									
4. Meath	425	295	720	5·9	7·4	6·6	1·5	3·1	2·2	5·5	6·	5·7	− 0·9	1·7	2·4	2·	− ·2	9	1	5	3	M.	...	1	3	...	3	1		
																						F.	...	2	3	1	2			
5. Waterford	223	201	424	8·6	6·7	7·7	2·	1·	1·5	8·2	4·8	6·5	− 1·2	3·2	1·3	2·2	+ ·7	4	0	9	0	M.	...	4	1	1	2			
																						F.	...	2	...	...	1			
6. Wexford	246	182	428	7·	6·	6·5	1·2 *	·9	1·	7·3	5·2	6·2	− ·3	2·4	...	1·4	+ ·4	7	6	...	...	M.	...	2	1	...	1	2		
																						F.								
CRIMINAL.																														
7. Dublin.—Dundrum ...	141	21	162	2·1	...	1·9	·4 *	...	·3	1·4	...	1·3	− ·6	·7	...	·6	+ ·3	4	6	...	...	M.	...	...	1					
																						F.								
Average for 6 Asylums =																						M.	...	3·5	2·1	·3	1·9	·7		
																						F.	...	3·5	2·1	·1	2·	·2	·2	
																								7·	4·2	·4	3·9	·9	·2	

* No P.M. recorded.

† P.M.'s for 1888-9 only.

‡ P.M.'s for 1899 only.

TABLE A₁.

A Summary of Table A (Columns 1 to 6).

ASYLUMS.	Number of Asylums dealt with.	1			2			3			4			4A	5			5A	6		
		Average No. Resident during 5 years.			Ratio per cent. to Average No. Resident of Deaths from ALL CAUSES. 5 years.			Ratio per cent. to Average No. Resident of Deaths with ACTIVE TUBERCLE. 5 years.			Ratio per cent. to Average No. Resident of Deaths from ALL CAUSES. 1899.			Comparison of 1899 with Av. of 5 yrs.	Ratio per cent. to Average No. Resident of Deaths with ACTIVE TUBERCLE. 1899.			Comparison of 1899 with Av. of 5 yrs.	Average Length of Residence of Cases in Column 5.		
		M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.		M.	F.	Total.
																			yr. mo.	yr. mo.	yr. mo.
ND AND WALES.																					
County Asylums	49	22,217	27,983	50,200	11·9	8·3	9·9	2·4	2·1	2·2	11·8	8·4	9·9	0·0	2·6	2·1	2·3	+0·1	5 8	6 2	5 11
Borough and City, etc., Asylums ...	10	2,010	2,193	4,203	11·0	7·8	9·3	1·9	1·4	1·7	13·4	8·6	10·7	+1·4	2·4	1·4	1·8	+0·1	3 9	4 10	4 2
Total—County, Borough, and City Asylums ...	59	24,227	30,176	54,403	11·8	8·3	9·9	2·4	2·0	2·2	11·9	8·4	10·0	+0·1	2·6	2·0	2·3	+0·1	5 6	6 1	5 9
Hospitals, etc.	7	3,116	2,621	5,737	6·2	6·0	6·1	1·8	1·5	1·7	6·6	7·2	6·8	+0·7	2·0	1·8	1·9	+0·2	10 1	9 1	9 8
Total—England and Wales ...	66	27,343	32,797	60,140	11·2	8·1	9·5	2·3	2·0	2·1	11·4	8·3	9·7	+0·2	2·5	2·0	2·2	+0·1	5 11	6 3	6 1
AND.																					
Royal and District Asylums	10	2,198	2,286	4,484	9·4	7·8	8·6	1·8	1·5	1·6	10·8	8·8	9·8	+1·2	2·2	1·4	1·8	+0·2	5 8	3 3	4 9
ND.																					
District and Criminal Asylums ...	7	2,545	2,048	4,593	6·8	6·6	6·6	1·6	2·7	2·0	7·7	8·4	8·0	+1·4	2·3	3·1	2·7	+0·7	5 2	3 8	4 4
Totals	83	32,086	37,131	69,217	10·7	8·0	9·4	2·2	2·0	2·1	11·0	8·5	9·6	+0·2	2·5	2·0	2·2	+0·1	5 10	5 11	5 10

TABLE A_2.

SHOWING TOTALS, ETC., FROM WHICH TABLE A_1 IS CALCULATED.

ASYLUMS.	Number of Asylums dealt with.	2			3			1b			4			5			6		
		Total DEATHS. 5 years.			Total DEATHS from TUBERCLE. 5 years.			Average No. Resident. 1899.			DEATHS. 1899.			DEATHS from TUBERCLE. 1899.			Sum of lengths of Residence of Cases in Column 5. Years.		
		M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
I. ENGLAND AND WALES.																			
County Asylums	49	13,220	11,637	24,857	2,700	2,929	5,629	23,176	30,460	53,636	2,735	2,595	5,330	607	635	1,242	3410·3	3892·0	7302·3
Borough and City, etc., Asylums	10	1,106	856	1,962	193	157	350	2,129	2,316	4,445	285	190	475	52	32	84	195·5	150·1	345·6
Total—County, Borough, and City Asylums	59	14,326	12,493	26,819	2,893	3,086	5,979	25,305	32,776	58,081	3,020	2,785	5,805	659	667	1,326	3605·8	4042·1	7647·9
Hospitals, etc.	7	960	788	1,748	282	203	485	3,079	2,491	5,570	202	179	381	62	44	106	624·0	411·7	1035·7
Total—England and Wales	66	15,286	13,281	28,567	3,175	3,289	6,464	28,384	35,267	63,651	3,222	2,964	6,186	721	711	1,432	4229·8	4453·8	8683·4
II. SCOTLAND.																			
Royal and District Asylums	10	1,038	892	1,930	203	165	368	2,506	2,580	5,086	272	226	498	55	36	91	311·4	118·2	429·6
III. IRELAND.																			
District and Criminal Asylums	7	863	755	1,618	190	274	464	2,683	2,228	4,911	206	186	392	61	70	131	317·0	257·0	574·0
Grand total	83	17,187	14,928	32,115	3,568	3,728	7,296	33,573	40,075	73,648	3,700	3,376	7,076	837	817	1,654	4858·0	4829·0	9687·0

TABLE B.

Group I.—ENGLAND AND WALES—County Asylums.

Division I.—*Tubercular Death-rate* = ·3 *to* 2·0.

Twenty-six Asylums.	1 Tubercle death-rate	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
Oxford. 32. Littlemore ...	1·	—	Sand	5½	480	600	Agricultural	Artificial	Artificial	Both	Yes
Glamorgan. 11. Angelton ...	1·	100	Gravel on grit	—	492	612	Mixed	Natural	Both	—	Yes
Somerset.* 35. Cotford ...	1·2	135	Clay	3	530	750	Agricultural	Artificial	Both	Polished	No
Sussex, West. 40. Chichester ...	1·2	95	Gravel	4	480	800	Mixed	Artificial	Artificial	Polished	—
Wiltshire. 43. Devizes ...	1·2	385	Sand	5	480	660	Agricultural	Artificial	Open fires	Polished	—
Bucks. 3. Aylesbury ...	1·2	—	Loam on limestone	8	304	470	Agricultural	—	Artificial	Scrubbed	No
London. 27. Hanwell ...	1·3	76	Gravel on sand	6	480	604	Urban	Both	Both	Both	No
25. Colney Hatch...	1·4	—	Clay	4	744	683	Urban	Both	Artificial	Polished	Yes
Isle of Wight.† 42. Newport ...	1·4	—	Light sandy	5	480	600	Mixed	Artificial	Both	Polished	No
Somerset. 34. Wells	1·4	—	Loam	—	480	600	Mixed	Artificial	Artificial	Polished	No
Norfolk. 29. Thorpe... ...	1·5	—	Chalk and sand	11	480	600	Agricultural	Natural	Open	Polished	—
Yorkshire. 49. Beverley ...	1·5	—	Chalk subsoil	7	559	650	Agricultural	—	Both	Polished	No
Surrey. 24. Cane Hill ...	1·5	—	Chalk	6	—	—	Urban	Natural	Open fires	Both	No
Cambs. 4. Fulbourne ...	1·5	80	Subsoil on chalk	8½	480	600	Agricultural	Natural	Both	Both	—
Middlesex. 28. Wandsworth ...	1·5	40	Loam on gravel	7½	480	600	Mixed	Natural	Artificial	Polished	—
Hereford. 15. Hereford ...	1·5	—	Marl on sandstone	6	—	—	Mixed	—	Artificial	Both	Yes
Gloucester. 13. Gloucester ...	1·6	—	Gravel	9	434	682	Mixed	Natural	Open fires	Scrubbed	No
Yorkshire. 48. Menston ...	1·7	—	Clay	—	460	570	Mixed	Both	Artificial	Polished	Yes
Berkshire. 2. Moulsford ...	1·8	—	Gravel on marl	4½	540	600	Agricultural	Natural	Artificial	Polished	Yes
Hampshire. 14. Fareham ...	1·8	130	Gravel on chalk	4½	—	—	Agricultural	Natural	Open fires	Both	No
Lancashire. 18. Lancaster ...	1·8	—	Subsoil on grit	4½	—	—	Mixed	—	—	Polished	Yes
London. 23. Banstead ...	1·8	—	Chalk	—	480	600	Urban	—	Artificial	Polished	No
Warwick. 41. Hatton... ...	1·9	310	Clay	3	490	700	Urban	Artificial	Artificial	Polished	No
Devon. 10. Exminster ...	2·	250	Sand	9	480	792	Agricultural	Artificial	Artificial	Polished	No
Beds, Herts, etc. 1. Arlesey	2·	200	—	7	480	600	Agricultural	—	Open fires	Both	—
Lincoln. 22. Bracebridge ...	2·	—	Limestone	6	545	625	Mixed	Artificial	Artificial	Polished	No

* New Asylum. 3 years.

Division II.—*Tubercular Death-rate* = 2·1 *to* 5·9.

Twenty-three Asylums.	1 Tubercle death-rate	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
Salop, etc. 33. Shrewsbury ...	2·1	—	Clay	9	420	660	Urban	Artificial	Artificial	Polished	No
Worcester. 44. Powick... ...	2·1	—	Heavy clay	4	480	600	Mixed	Natural	Artificial	Both	No
Kent. 17. Chartham ...	2·1	250	Chalk	4	475	600	Agricultural	Natural	Open fires	Polished	No
Yorkshire. 46. Wakefield ...	2·3	—	Clay	8	660	900	Urban	Natural	Open fires	Both	No
47. Wadsley ...	2·3	—	Clay	5	600	800	Urban	Natural	Artificial	—	No
Cornwall. 6. Bodmin ...	2·3	600	—	7	—	—	Agricultural	Natural	Open fires	—	—
Glamorgan. 12. Parc-Gwylt ...	2·4	300	Wet clay	—	450	564	Agricultural	Natural	Artificial	—	—
Cumberland, etc. 7. Carlisle ...	2·4	—	Porous	6½	—	—	Mixed	Natural	Open fires	Polished	No
Surrey. 39. Brookwood ...	2·5	—	Clay	9	236	500	Mixed	Natural	Open fires	Scrubbed	No
Notts. 31. Nottingham ...	2·5	—	Sandstone	4	—	630	Mixed	Natural	Artificial	Scrubbed	No
London. 26. Claybury ...	2·6	250	Clay	6½	—	—	Urban	Natural	Open fires	Polished	Yes
Yorkshire. 45. Clifton	2·6	—	Clay	8	450	600	Mixed	Natural	Both	Polished	No
Lancashire. 20. Whittingham ...	2·6	250	Clay	9	480	600	Urban	Artificial	Artificial	Polished	Yes
Suffolk. 38. Woodbridge ...	2·7	100	Sand on gravel	5½	450	620	Agricultural	Natural	Open fires	Polished	No
Chester. 5. Upton	3·	67	Red sandstone	—	480	600	Mixed	Natural	Artificial	Polished	—
Derby. 9. Derby	3·2	300	Clay	5	480	600	Mixed	Natural	Artificial	Polished	Yes
Denbigh. 8. Denbigh ...	3·3	310	Gravel on clay	9	510	570	Mixed	Natural	Open fires	Scrubbed	No
Leicester. 21. Leicester ...	3·3	—	Clay	4	600	600	Agricultural	Natural	Open fires	Scrubbed	—
Kent. 16. Barming Heath	3·6	220	Kent ragstone	6	496	593	Mixed	—	Artificial	Polished	Yes
Northumberland. 30. Morpeth ...	4·8	—	Clay	—	—	—	Mixed	Artificial	Both	Polished	—
Lancashire. 19. Rainhill ...	5·	250	Clay on marl	4	600	760	Urban	Both	Both	Polished	No
Stafford. 36. Burntwood ...	5·2	—	Mixed marl	4	500	650	Urban	Natural	Both	Polished	No
37. Stafford ...	5·9	—	Gravel and sand	9	500	625	Urban	Natural	Both	Polished	No

† 4 years. New Asylum.

TABLE B.

GROUP I.—ENGLAND AND WALES—COUNTY ASYLUMS.

DIVISION I.—*Tubercular Death-rate* = ·3 *to* 2·0.

TWENTY-SIX ASYLUMS.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
XFORD. 32. Littlemore ...	1·	—	Sand	5½	480	600	Agricultural	Artificial	Artificial	Both	Yes
LAMORGAN. 11. Angelton ...	1·	100	Gravel on grit	—	492	612	Mixed	Natural	Both	—	Yes
OMERSET.* 35. Cotford ...	1·2	135	Clay	3	530	750	Agricultural	Artificial	Both	Polished	No
USSEX, WEST. 40. Chichester ...	1·2	95	Gravel	4	480	800	Mixed	Artificial	Artificial	Polished	—
VILTSHIRE. 43. Devizes ...	1·2	385	Sand	5	480	660	Agricultural	Artificial	Open fires	Polished	—
UCKS. 3. Aylesbury ...	1·2	—	Loam on limestone	8	394	470	Agricultural	—	Artificial	Scrubbed	No
ONDON. 27. Hanwell ...	1·3	76	Gravel on sand	6	480	604	Urban	Both	Both	Both	No
25. Colney Hatch...	1·4	—	Clay	4	744	683	Urban	Both	Artificial	Polished	Yes
SLE OF WIGHT.† 42. Newport ...	1·4	—	Light sandy	5	480	600	Mixed	Artificial	Both	Polished	No
SOMERSET. 34. Wells	1·4	—	Loam	—	480	600	Mixed	Artificial	Artificial	Polished	No
NORFOLK. 29. Thorpe... ...	1·5	—	Chalk and sand	11	480	600	Agricultural	Natural	Open	Polished	—
YORKSHIRE. 49. Beverley ...	1·5	—	Chalk subsoil	7	550	650	Agricultural	—	Both	Polished	No
SURREY. 24. Cane Hill ...	1·5	—	Chalk	6	—	—	Urban	Natural	Open fires	Both	No
CAMBS. 4. Fulbourne ...	1·5	80	Subsoil on chalk	8½	480	600	Agricultural	Natural	Both	Both	—
MIDDLESEX. 28. Wandsworth ...	1·5	40	Loam on gravel	7½	480	600	Mixed	Natural	Artificial	Polished	—
HEREFORD. 15. Hereford ...	1·5	—	Marl on sandstone	6	—	—	Mixed	—	Artificial	Both	Yes
GLOUCESTER. 13. Gloucester ...	1·6	—	Gravel	9	434	682	Mixed	Natural	Open fires	Scrubbed	No
YORKSHIRE. 48. Menston ...	1·7	—	Clay	—	460	570	Mixed	Both	Artificial	Polished	Yes
BERKSHIRE. 2. Moulsford ...	1·8	—	Gravel on marl	4½	540	600	Agricultural	Natural	Artificial	Polished	Yes
HAMPSHIRE. 14. Fareham ...	1·8	130	Gravel on chalk	4½	—	—	Agricultural	Natural	Open fires	Both	No
LANCASHIRE. 18. Lancaster ...	1·8	—	Subsoil on grit	4½	—	—	Mixed	—	—	Polished	Yes
LONDON. 23. Banstead ...	1·8	—	Chalk	—	480	600	Urban	—	Artificial	Polished	No
WARWICK. 41. Hatton... ...	1·9	310	Clay	3	490	700	Urban	Artificial	Artificial	Polished	No
DEVON. 10. Exminster ...	2·	250	Sand	9	480	792	Agricultural	Artificial	Artificial	Polished	No
BEDS, HERTS, ETC. 1. Arlesey	2·	200	—	7	480	600	Agricultural	—	Open fires	Both	—
LINCOLN. 22. Bracebridge ...	2·	—	Limestone	6	545	625	Mixed	Artificial	Artificial	Polished	No

DIVISION II.—*Tubercular Death-rate* = 2·1 *to* 5·9.

TWENTY-THREE ASYLUMS.	1 Tubercle death rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
SALOP, ETC. 33. Shrewsbury ...	2·1	—	Clay	9	420	660	Urban	Artificial	Artificial	Polished	No
WORCESTER. 44. Powick... ...	2·1	—	Heavy clay	4	480	600	Mixed	Natural	Artificial	Both	No
KENT. 17. Chartham ...	2·1	250	Chalk	4	475	600	Agricultural	Natural	Open fires	Polished	No
YORKSHIRE. 46. Wakefield ...	2·3	—	Clay	8	660	900	Urban	Natural	Open fires	Both	No
47. Wadsley ...	2·3	—	Clay	5	600	800	Urban	Natural	Artificial	—	No
CORNWALL. 6. Bodmin ...	2·3	600	—	7	—	—	Agricultural	Natural	Open fires	—	—
GLAMORGAN. 12. Parc-Gwylt ...	2·4	300	Wet clay	—	450	564	Agricultural	Natural	Artificial	—	—
CUMBERLAND, ETC. 7. Carlisle ...	2·4	—	Porous	6½	—	—	Mixed	Natural	Open fires	Polished	No
SURREY. 39. Brookwood ...	2·5	—	Clay	9	236	500	Mixed	Natural	Open fires	Scrubbed	No
NOTTS. 31. Nottingham ...	2·5	—	Sandstone	4	—	630	Mixed	Natural	Artificial	Scrubbed	No
LONDON. 26. Claybury ...	2·6	250	Clay	6½	—	—	Urban	Natural	Open fires	Polished	Yes
YORKSHIRE. 45. Clifton	2·6	—	Clay	8	450	600	Mixed	Natural	Both	Polished	No
LANCASHIRE. 20. Whittingham ...	2·6	250	Clay	9	480	600	Urban	Artificial	Artificial	Polished	Yes
SUFFOLK. 38. Woodbridge ...	2·7	100	Sand on gravel	5½	450	620	Agricultural	Natural	Open fires	Polished	No
CHESTER. 5. Upton	3·	67	Red sandstone	—	480	600	Mixed	Natural	Artificial	Polished	—
DERBY. 9. Derby	3·2	300	Clay	5	480	600	Mixed	Natural	Artificial	Polished	Yes
DENBIGH. 8. Denbigh ...	3·3	310	Gravel on clay	9	510	570	Mixed	Natural	Open fires	Scrubbed	No
LEICESTER. 21. Leicester ...	3·3	—	Clay	4	600	600	Agricultural	Natural	Open fires	Scrubbed	—
KENT. 16. Barming Heath	3·6	220	Kent ragstone	6	496	593	Mixed	—	Artificial	Polished	Yes
NORTHUMBERLAND. 30. Morpeth ...	4·8	—	Clay	—	—	—	Mixed	Artificial	Both	Polished	—
LANCASHIRE. 19. Rainhill ...	5·	250	Clay on marl	4	600	760	Urban	Both	Both	Polished	No
STAFFORD. 36. Burntwood ..	5·2	—	Mixed marl	4	500	650	Urban	Natural	Both	Polished	No
37. Stafford ..	5·9	—	Gravel and sand	9	300	625	Urban	Natural	Both	Polished	No

* New Asylum. 3 years.

† 4 years. New Asylum.

TABLE B.

Group 2.—ENGLAND AND WALES—*a.* Borough, City, etc., Asylums.

Division 1.—*Tubercular Death-rate* = ·5 *to* 2·0.

Eleven Asylums.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
London (City). 4. Stone	0·5	120	Light gravel, sand, and chalk	9	480	600	Urban	—	—	Polished	Yes
Leicester. 3. Humberstone	1·0	250	Clay	6	—	—	Urban	Artificial	Artificial	Both	No
Nottingham (City). 7. Mapperley	1·2	400	Red clay	9	500	600	Urban	Artificial	Both	Polished	—
Norwich. 9. Hillesdon	1·4	—	Sand and gravel	—	—	—	Urban	Natural	Artificial	Polished	—
Bristol. 1. Fishponds	1·9	150	Gravel on sandstone	5	480	600	Urban	—	Artificial	Polished	No
Plymouth. 8. Ivybridge	2·0	—	Peat and grit	6	550	600	Urban	Natural	Both	Polished	No

Division 2.—*Tubercular Death-rate* = 2·0 *to* 3·1.

Six Asylums.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
Derby. 2. Rowditch	2·4	280	Clay	4	600	700	Urban	—	Both	Both	No
Yorks. 5. Middlesbrough	2·4	—	Clay	9	492	800	Urban	Artificial	Open fires	Polished	Yes
Sunderland. 10. Ryhope	2·7	—	Clay	5	600	650	Urban	Artificial	Artificial	Both	No
Newcastle (City). 6. Gosforth	3·0	—	Heavy clay	7	—	—	Urban	Natural	Artificial	Polished	No

b. Hospitals, etc.

Oxford. 12. Warneford	0·1*	—	Porous	6	—	—	—	Natural	Open fires	Polished	No
Berks. 16. Broadmoor	0·3*	400	Dry gravel	6	484	900	Mixed	Artificial	Artificial	Both	No
Gloucester. 11. Barnwood House	0·5	—	Gravel	4	—	845	—	Artificial	Artificial	Polished	No
Met. District, Dartford. 13. Darenth	0·8	200	Chalk	4	550	550	Urban	Both	Open fires	Both	Yes
Yarmouth. 15. Royal Naval	1·1	—	Sandy	9	1000*	1000*	—	Artificial	Artificial	Both	No
Redhill. 17. Earlswood	2·4	—	Clay	—	—	500	Mixed	Artificial	Open fires	Both	Yes
Watford. 14. Leavesden	3·0	—	Gravel and clay on chalk	5	—	—	Mixed, imbecile, and infirm	Natural	Both	Both	Yes

TABLE B.

Group 3.—SCOTLAND—Royal and District Asylums.

Division I.—*Tubercular Death-rate* = ·5 *to* 1·9.

Eight Asylums.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
Perth.											
4. Murray's Royal	0·5	120	Clay	8	—	900	—	Natural	Artificial	Polished	No
8. Midlothian	0·8	694	Clay	5½	253	573	Mixed	Natural	Both	Polished	—
7. Lanark	0·9	700	—	6½	400	800	Mixed	Both	Artificial	Polished	—
Aberdeen.											
1. Royal	1·2	—	Light and sandy	6	800	1000	Mixed	Natural	Artificial	Polished	No
5. Govan	1·3	110	Stiff clay	6	430	850	Urban	Both	Artificial	Polished	No
9. Perth	1·4	400	Gravel and sand	—	360	1000	Agricul.	Natural	Both	Both	—
6. Roxborough	1·7	500	Clay	—	360	720	Mixed	Natural	Both	Polished	—
Edinburgh.											
2. Royal	1·9	250	Gravel	6	—	—	Mixed	Natural	Both	Both	—

Division II.—*Tubercular Death-rate* = 2·0 to 2·7.

Two Asylums.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
Montrose.											
3. Royal	2·0	200	Clay on rock	5½	600	720	Mixed	Artificial	Both	Polished	—
6. Inverness	2·7	450	Gravel and clay	3½	360	800	Agricul.	Both	Artificial	Polished	No

TABLE B.

GROUP 4.—IRELAND—DISTRICT AND CRIMINAL ASYLUMS.

DIVISION I.—*Tubercular Death-rate* = 0·3 *to* 1·5.

FOUR ASYLUMS.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day.	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
7. Dundrum criminal	0·3	300	Chalk and sand	9	609	864	Mixed	Natural	Fires	Both	No
1. Belfast	0·9	—	Clay	—	400	600	Urban	Both	Both	Polished	,,
6. Wexford	1·0	—	Sand	8	600	800	Agricul.	Natural	,,	,,	—
5. Waterford	1·5	—	Clay	4	300	600	Mixed	Artificial	Artificial	,,	Yes

DIVISION II.—*Tubercular Death-rate* = 2·2 *to* 3·0.

THREE ASYLUMS.	1 Tubercle death-rate.	2 Height above O.D.	3 Soil.	4 Average hours outside.	5 Cubic space. Day	5 Cubic space. Night.	6 Character of population.	7 Ventilation.	8 Heating.	9 How floors are cleaned.	10 Milk sterilised.
4. Meath—West Meath	2·2	320	Sandy loam	—	280	525	Agricul.	Artificial	Artificial	Both	No
3. Limerick	2·5	—	Damp	4	400	600	,,	Natural	,,	Polished	—
2. Cork	3·0	—	Gravel on brown stone	3	360	600	,,	,,	,,	,,	Yes

TABLE B_1.

Summary of Table B.

Division I.—"Better."

Asylums.	Number.	Mean elevation.		Soil.		Hours outside.		Day space.		Night space.		Character of population.			Ventilation.		Heating.		Floor.		Milk.	
		Number of asylums.	Elevation.	Good.	Bad.	Asylums.	Mean hours.	Asylums.	Cubic space.	Asylums.	Cubic space.	Agricultural.	Mixed.	Urban.	Natural.	Artificial.	Fires.	Artificial.	Polished.	Scrubbed.	Sterilised.	Not.
English county	26	11	164	20	6	22	6·5	22	493	22	636	11	10	5	7	9	6	13	16	2	7	13
English borough	6	4	230	3	3	5	7·0	4	502	4	600	—	—	6	2	2	—	3	5	1	1	3
English hospitals, etc.	5	2	300	5	—	5	5·8	3	640	4	824	—	1	1	1	3	2	3	2	—	1	4
Scotch district and royal	8	7	396	3	4	6	6·3	6	434	7	830	1	5	1	6	—	—	4	5	—	—	3
Irish district, etc.	4	1	300	2	2	3	7·0	4	477	4	716	1	2	1	2	1	1	1	3	—	1	2
Total	49	25	260	33	15	41	6·6	39	498	41	691	13	18	14	18	15	9	24	31	3	10	25

Division II.—"Worse."

English county	23	11	263	6	16	20	6·3	18	490	19	630	5	10	8	18	3	8	9	14	4	4	14
English borough	4	1	28	—	4	4	6·25	3	564	3	717	—	—	4	1	2	1	2	2	—	1	3
English hospitals, etc.	2	—	—	—	2	1	5	—	—	1	500	—	2	—	1	1	1	—	—	—	2	—
Scotch district and royal	2	2	325	—	2	2	4·5	2	480	2	760	1	1	—	—	1	—	1	2	—	—	1
Irish district, etc.	3	1	300	2	1	2	3·5	3	346	3	575	3	—	—	1	2	—	3	2	—	1	1
Total	34	15	273	8	25	29	5·8	26	481	28	638	9	13	12	21	9	10	15	20	4	8	19

TABLE C.

Showing the relation of admitted to total cases dying of Tubercular disease in 1899, English County and Borough Asylums.

	I. Total average number Resident, 1899.			II. Admitted Tubercular cases died in 1899.			III. Total Tubercular cases died in 1899.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
30 Asylums, with rate not exceeding 2·	12,646	17,304	29,950	56	50	106	214	256	470
24 Asylums with rate over 2·	11,001	12,098	23,099	73	72	145	399	361	760
9 (of above 24) with rate over 3·	4,059	4,309	8,368	30	25	55	203	178	381
54 Asylums .	23,647	29,402	53,049	129	122	251	613	617	1230
	Column III per cent. of Column II.			Per mille Resident.			Per mille Resident.		
	M.	F.	Total.						
30 Asylums .	382	512	443	4·4	2·9	3·5	16·9	14·8	15·7
24 Asylums .	545	501	524	6·6	6·0	6·3	36·3	29·8	32·9
9 Asylums .	677	711	693	7·3	5·8	6·6	50·0	41·3	45·5
54 Asylums .	475	506	481	5·4	4·1	4·7	25·9	21·0	23·2
78 Asylums (including those in C_1) . .	459	499	475	5·4	4·2	4·8	24·8	20·8	22·7

TABLE C_1.

Showing the relation of admitted to total cases of Fatal Tuberculosis in 24 English, Scotch, and Irish Asylums not included in Table C.

	I. Total average number Resident, 1899.			II. Admitted tubercular cases died in 1899.			III. Total cases of Tuberculosis fatal in 1899.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
17 Asylums with tubercular death-rate not exceeding 2 per cent. (5 years' average) . .	4,893	4,034	8,927	29	16	45	75	46	121
7 Asylums with rate over 2 per cent. . None of these exceed 3 per cent.	3,375	3,266	6,641	16	16	32	103	103	206
24 Asylums .	8,268	7,300	15,568	45	32	77	178	149	327
	Column III per cent. of Column II.			Per mille Resident.			Per mille Resident.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
17 Asylums .	258	287	269	5·9	4·0	5·0	15·3	11·4	13·6
7 Asylums .	644	644	644	4·7	4·9	4·8	30·5	31·5	31·0
24 Asylums .	395	465	425	5·4	4·4	4·9	21·5	20·4	21·0

TABLE D.

Effect of size of Asylum on Death-rate from Tubercle. (5 years' average.)

Size of Asylums.	English County and Borough Asylums (59). No. of Asylums.	T. rate per 1000.	All Asylums in Tuberculosis Committee Report. No. of Asylums.	T. death-rate per 1000.
Under 300 .	5	16	13	11
300 to 500 .	10	20	14	18
500 to 700 .	11	22	16	21·5
700 to 900 .	11	23	14	22
900 to 1100 .	9	23	10	23
Upwards . .	13	23	16	23
Totals and mean	59	22	83	20